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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/517,571

10/14/2005

Thomas Vetter

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7590

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EXAMINER

YAN, REN LUO

ART UNIT

PAPER NUMBER

2854

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/517,571	Applicant(s) VETTER, THOMAS	
	Examiner Ren L. Yan	Art Unit 2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 12, 13 and 17-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 12, 13 and 17-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3-16-2010 has been entered.

Claims 1 is objected to because (a) the recitation of “predetermined processing stations” on line 4 should be changed to -- said predetermined number of processing stations -- so as to maintain consistent claim terminology and (b) the recitation of “an operating frequency of inkjet droplets of an inkjet printing head that is transmitted to a computing unit...” is first unclear where this inkjet printing head is coming from and how it is related to the rest of the structure of the device for processing a surface of objects as claimed, and second inaccurate because based on the disclosure of the present invention, the operating frequency of inkjet droplets of an inkjet printing head is not transmitted to a computing unit. The present disclosure only supports that the central controller generates a lead frequency corresponds to the dot frequency of the inkjet printing head 6.

Claim 19 is also objected to because the recitation of “the signals of said at least one incremental encoders” on line 2 lacks proper antecedent basis and the last recitation of “the respective drive means” does not find proper antecedent basis since parent claim 12 only recites "a drive means of said conveying unit".

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/12440 in view of DE 3729911 and Thomason (5,207,153).

The WO 01/12440 teaches the structure of a device for processing the surface of an object 20 as claimed comprising: a predetermined number of processing station 18; a conveying unit 14, 16, 48 and 50 that performs processing movements where, objects 20 are transported to the predetermined number of processing stations; said conveying unit having a central controller 62 that controls the processing movements of said conveying unit and processes of said processing stations, by which the functions of said conveying unit and of said processing station are synchronized correlated with transport of said object 20 and wherein said central controller directly controls the processes of the processing stations; wherein starting signals are generated in the central controller 62 which is provided with an inherent computing unit for synchronizing rotation of the objects with the processing stations, said synchronizing rotation being imparted by a drive means of the conveying unit. The Examiner notes that WO 01/12440 teaches on page 3, lines 14-34 that the central controller 62 provides control signals to each servomotor 52, which drives each processing station(print head), to maintain registration (synchronization) for the blanket 46(printing element of the print head 18) at each print position with the articles 20 being printed. Thus, WO 01/12440 teaches to provide control signals on when to start and stop the servomotor 52 for the processing station(print head) based on the sensed rotational position of

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the objects to achieve the synchronization among the conveying unit and the processes of the processing stations. See also Figs. 1-4 and pages 2 and 3 in WO 01/12440 for details.

However, WO 01/12440 may not specifically teach to synchronize the operations of the conveying unit and the processing station by the use of a clock pulse and the starting signals for the transmission of the clock pulse are generated in the central controller and does not teach to use inkjet printing heads.

DE 3729911 teaches in a processing machine with several stations the conventional use of a central control clock pulse and controlled by a central control to achieve register control among the various processing stations and the transport device. DE 3729911 specifically teaches that the control signal is formed by evaluating series of pulses which, on the one hand, come from incremental transmitters on the individual processing stations and, on the other hand, from a central control clock pulse and/or the transport device which connects the processing stations. The advantage of using the clock pulses as a means to control the various components of the processing machine is the freedom with which equipment changes can be made and, when setting up, furthermore the possibility of introducing register controls. See the abstract in DE 3729911 for example.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the device for processing a surface of an object in WO 01/12440 with central control clock pulse signals generated in the central controller as taught by DE 3729911 in order to predictably achieve the precise synchronization among the operations of the various conveying unit and processing stations and to improve processing registration on the objects being processed even when different diameter objects and mandrels are used in the device.

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Thomason teaches a printing apparatus using inkjet printers for applying ink to rotating objects. In the printing apparatus, the operation of the object conveying unit, the rotation of the object being printed and the processing stations are synchronized and the operating frequency of inkjet droplets of the inkjet printing heads 16 is controlled in order for the object conveying unit and the processing stations to work in a synchronous manner. See Fig. 1 and column 2, lines 1-62 in Thomason for example.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the object printing apparatus of WO 01/12440, as modified by DE 3729911 with inkjet print heads as taught by Thomason as a simple substitution of one known type of print head for another in order to predictably achieve the same object printing operation as intended.

Claims 12, 13 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/12440 in view of DE 3729911 and Thomason as applied to claim 1 above, and further in view of Applicant's Admitted Prior Art(AAPA).

With respect to claim 12, WO 01/12440, as modified by DE 3729911 and Thomason teaches all that is claimed wherein the conveying unit further comprises a rotary cycle apparatus 14 and an inherently drive means for the rotary cycle apparatus, wherein the objects 20 are arranged in a circumferential orientation on the rotary cycle apparatus 14, and wherein the drive means rotates the objects on the rotary cycle apparatus. WO 01/12440 also teaches the use of incremental transmitters to generate clock pulses. However, the applied prior art does not specifically state that incremental encoders are used. AAPA teaches on page 1, lines 25-29 of the present specification that incremental encoders are conventionally used at the object supports for detection of the rotary positions of the objects and the signals generated by the incremental

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encoders are transmitted to the processing stations to control the operation of the processing stations. It would have been obvious to those having ordinary skill in the art at the time of the invention to provide the device of WO 01/12440, as modified by DE 3729911 and Thomason with the known incremental encoders disposed at the object supports in order to predictably generate the clock pulses indicating the rotary positions of the object so as to enhance the operation of the conveying drive unit for precise position control of the objects being processed.

With respect to claim 13, WO 01/12440, as modified by the applied prior art teaches the drive means that generates rotation about an axis of symmetry of the objects in dependence upon signals of the incremental encoder for position control.

With respect to claim 17, in so far as structure is defined, the computing unit in the applied prior art is stationary.

With respect to claim 18, in so far as structure is defined, the computing unit in the applied prior art is arranged on a rotary cycle apparatus.

Regarding claim 19, the applied prior art teaches the lead frequency and the signals of said incremental encoders constitute input quantities for the position control of the drive means.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ren L. Yan whose telephone number is 571-272-2173. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ren L Yan/
Primary Examiner, Art Unit 2854
June 13, 2010